

AMENDMENTS TO THE CLAIMS

1. (Previously Presented) Apparatus for treatment of skin, comprising:
an applicator having at least one protuberance comprising a skin-contacting surface, and
at least one optical radiation source coupled to said applicator in a manner so as to, when activated, deliver optical radiation to said skin-contacting surface, and
a total internal reflection mechanism to prevent at least a portion of the radiation from passing through said skin-contacting surface unless in contact with skin.
2. (Previously Presented) Apparatus as claimed in claim 1 wherein said applicator is in the form of a brush adapted to be moved over the skin surface as radiation is applied thereto.
3. (Cancelled)
4. (Previously Presented) Apparatus as claimed in claim 1 wherein said at least one protuberance is selected from the group of projections and bristles extending therefrom.
5. (Previously Presented) Apparatus as claimed in claim 1 wherein said at least one protuberance is adapted to apply a compressive force to the skin during use.
6. (Previously Presented) Apparatus as claimed in claim 1 wherein said radiation at the-skin surface is between approximately 1 mW/cm^2 and approximately 100 W/cm^2 , the radiation depending at least on the condition being treated and the wavelength of the radiation.
7. (Previously Presented) Apparatus as claimed in claim 6 wherein said radiation at the skin surface is between 10 mW/cm^2 and 10 W/cm^2 .
8. (Previously Presented) Apparatus as claimed in claim 1 wherein said at least one optical radiation source is an array of optical radiation sources.
9. (Cancelled)

10. (Previously Presented) Apparatus for treatment of skin, comprising:
 - an applicator having a skin-contacting surface comprising at least one protuberance, and
 - at least one optical radiation source coupled to said applicator in a manner so as to, when activated, deliver optical radiation through said skin-contacting surface to skin in contact with said surface, wherein said at least one optical radiation source is an array of optical radiation sources, each said source being mounted to deliver optical radiation through at least one corresponding protuberance, wherein a skin contacting end of each protuberance has total internal reflection for the radiation when not in contact with the skin, but passes radiation to the skin when in contact therewith.
11. (Original) Apparatus as claimed in claim 1 wherein said array of optical radiation sources comprises semiconductor radiation-emitting elements.
12. (Original) Apparatus as claimed in claim 1 wherein the at least one optical radiation source is operable at different wavelengths to effect a desired treatment protocol.
13. (Original) Apparatus as claimed in claim 1 wherein the at least one optical radiation source is a continuous wave radiation source.
14. (Original) Apparatus as claimed in claim 1 further comprising a heat sink
15. (Previously Presented) Apparatus for treatment of skin, comprising:
 - an applicator having a skin-contacting surface comprising at least one protuberance;
 - at least one optical radiation source coupled to said applicator in a manner so as to, when activated, deliver optical radiation through said skin-contacting surface to skin in contact with said surface;
 - a handle adapted to be held by an operator when the apparatus is in use and to conduct heat; and

a heat sink thermally coupled to said at least one radiation source and said handle and configured to conduct heat from said at least one radiation source to said handle during operation of said at least one radiation source.

16. (Previously Presented) Apparatus as claimed in claim 1 including a detector of contact between said applicator and the skin, and controls operative in response to said detector for permitting radiation to be applied from said at least one source to the skin.

17. (Previously Presented) Apparatus as claimed in claim 1 wherein said apparatus includes a mechanism for applying a substance to the skin as the skin is being irradiated.

18. (Cancelled)

19. (Original) Apparatus as claimed in claim 1 wherein said at least one radiation source is part of said applicator.

20. (Original) Apparatus as claimed in claim 1 wherein said applicator is a hand-held unit.

21. (Cancelled)

22. (Original) Apparatus as claimed in claim 1 including a heat sink component in thermal contact with said at least one source, said component being adapted to be cooled prior to use of the apparatus.

23. (Currently Amended) Apparatus as claimed in claim 22 wherein said component is a phase change material, wherein the phase change material undergoes a phase change when cooled, and returns to its initial phase when extracting heat from said at least one source.

24. – 55. (Cancelled)

56. (Previously Presented) Apparatus as claimed in claim 1, wherein said portion of the radiation comprises substantially all of the radiation delivered to the skin-contacting surface.

57. (Previously Presented) Apparatus as claimed in claim 8, wherein each of said sources is mounted to deliver optical radiation through at least one corresponding protuberance.

58. (Previously Presented) Apparatus as claimed in claim 8, wherein said array of optical radiation sources comprises at least one source selected from the group consisting of light-emitting diodes, laser diodes, fiber lasers, fiber lasers with laser diode pumping, superluminescent diodes, vertical cavity surface emitting lasers, incandescent lamps, fluorescent lamps, micro halide lamps, low power lamps, wave- guide laser diodes, fluorescence solid-state light sources, or a combination thereof.

59. (Previously Presented) Apparatus as claimed in claim 8, wherein said array of optical radiation sources comprises identical sources.

60. (Previously Presented) Apparatus as claimed in claim 8, wherein said array of optical radiation sources comprises different sources.

61. (Previously Presented) Apparatus for treatment of skin, comprising:

an applicator having at least one protuberance comprising a skin-contacting surface,
at least one optical radiation source coupled to said applicator in a manner so as to, when activated, deliver optical radiation to said skin-contacting surface, and
a total internal reflection mechanism coupled to said skin-contacting surface to prevent at least a portion of the radiation from passing through said skin-contacting surface unless in contact with a surface having an index of refraction approximately greater than or equal to the index of refraction of the skin contacting surface.

62. (Previously Presented) Apparatus as claimed in claim 61, wherein said portion of the radiation comprises substantially all of the radiation delivered to the skin-contacting surface.

63. (Previously Presented) Apparatus as claimed in claim 61 wherein said at least one optical radiation source is an array of optical radiation sources.

64. (Previously Presented) Apparatus as claimed in claim 63, wherein each of said sources is mounted to deliver optical radiation through at least one corresponding protuberance.

65. (Previously Presented) Apparatus as claimed in claim 63, wherein said array of optical radiation sources comprises at least one source selected from the group consisting of light-emitting diodes, laser diodes, fiber lasers, fiber lasers with laser diode pumping, superluminescent diodes, vertical cavity surface emitting lasers, incandescent lamps, fluorescent lamps, micro halide lamps, low power lamps, wave- guide laser diodes, fluorescence solid-state light sources, or a combination thereof.

66. (Previously Presented) Apparatus as claimed in claim 63, wherein said array of optical radiation sources comprises identical sources.

67. (Previously Presented) Apparatus as claimed in claim 63, wherein said array of optical radiation sources comprises different sources.

68. (Previously Presented) Apparatus for treatment of skin, comprising:
an applicator having at least one protuberance comprising a skin-contacting surface, and
at least one optical radiation source coupled to said applicator in a manner so as to, when activated, deliver optical radiation to said skin-contacting surface, wherein at least a portion of the radiation passes to the skin only when the surface contacts the skin.

69. (Previously Presented) Apparatus as claimed in claim 68, wherein said portion of the radiation comprises substantially all of the radiation delivered to the skin-contacting surface.

70. (Previously Presented) Apparatus as claimed in claim 68 wherein said at least one optical radiation source is an array of optical radiation sources.

71. (Previously Presented) Apparatus as claimed in claim 70, wherein each of said sources is mounted to deliver optical radiation through at least one corresponding protuberance.

72. (Previously Presented) Apparatus as claimed in claim 70, wherein said array of optical radiation sources comprises at least one source selected from the group consisting of light-emitting diodes, laser diodes, fiber lasers, fiber lasers with laser diode pumping, superluminescent diodes, vertical cavity surface emitting lasers, incandescent lamps, fluorescent lamps, micro halide lamps, low power lamps, wave- guide laser diodes, fluorescence solid-state light sources, or a combination thereof.

73. (Previously Presented) Apparatus for treatment of skin, comprising:

- an applicator having a skin-contacting surface comprising at least one protuberance;
- at least one optical radiation source coupled to said applicator in a manner so as to, when activated, deliver optical radiation to said skin-contacting surface; and
- a handle adapted to be held by an operator when the apparatus is in use, wherein the handle comprises a heat sink configured to remove heat from said at least one radiation source to an operator's hand.